

**REMARKS**

Claims 18, 20, 22, 24, 27, 28, 34 and 36 are currently being amended, while claim 19 is currently being cancelled without any prejudice or disclaimer thereto. Basis for the amendments to the aforementioned claims can be found throughout Applicant's specification, including on page 2, lines 26-27; page 2, line 30 - page 3, line 6, and the Examples.

The amendments presented herein do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter these amendments.

**1. Election/Restriction**

Applicant elects Group I, as noted by the Examiner in the current Office Action. Claims 18 and 20-23 read on this election, with claim 19 currently being cancelled.

Additionally, Applicant respectfully traverses the instant restriction requirement as outlined in the pending Office Action. In particular, the current Office Action states,

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 C.F.R. 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I. Claims 18-23, drawn to a composition of Lewis base adducts.

Group II. Claims 24-27, drawn to a process for preparing Lewis base adducts.

Group III. Claims 28-33, drawn to a composition of a catalyst.

Group IV. Claims 34-35 drawn to a catalyst system for polymerization.

Group V. Claim 36, drawn to a process of using a catalyst system, classified in class 502, subclass 127.

The inventions are distinct, each from the other because of the following reasons:

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Claims 18, 24, 28, 34, and 36 are obvious over Scata et al. (US 4,220,554) which discloses a method of preparing catalyst component for polymerizing alpha-olefins by reaction between (a) a Ti containing compound, (b) alkoxymagnesium halide, and (c) an electron-donor compound (abstract, and col. 1line 35-col.2line 68).

Accordingly, the special technical feature linking the inventions, such as  $MgCl_n(OR)_{2-n}LB$ , does not provide a contribution over the prior art, and no single general inventive concept exists. Therefore, restriction is appropriate.

With respect to the instant restriction requirement, the Examiner's basis for restricting claims 18 and 20-36 falls solely on the argument that U.S. Patent 4,220,554 (herein referred to as, "Scata, et al.") renders obvious the aforementioned claims, and as such, the aforementioned claims do not share the same or corresponding special technical feature under PCT Rule 13.2. However, Applicant respectfully believes Scata, et al. does not render claims 18 and

20-36 unpatentable, and therefore, respectfully believes claims 18 and 20-36 do satisfy PCT Rule 13.2, the merit of which is addressed in detail below. Accordingly, since Applicant respectfully believes Scata, et al. does not render currently pending claims 18 and 20-36 unpatentable, as discussed in detail below, Applicant respectfully traverses the instant restriction. For this reason, Applicant respectfully requests the Examiner to withdraw the instant restriction requirement, and examine all claims pending in this application.

**2. Rejection of Claims 18, 19, 22, and 23 Under 35 U.S.C. §103(a)**  
**to Scata, et al.**

Claim 19 has been canceled rendering the rejection thereof moot. With respect to claims 18, 22, and 23, Applicant respectfully traverses the rejection of the aforementioned claims as being unpatentable under 35 U.S.C. §103(a) to Scata, et al.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must

be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

First and foremost, Scata, et al. discloses in col. 3 lines 26-31,

The reaction of (a), (b) and (c) is conducted under conditions such that the amount of electron-donor compound present in combined form in the solid product separated from the reaction mixture is lower than 1 mole per gram atom of Mg, and in particular is comprised between **0.1 and 0.3 moles per gram atom of Mg**. (Emphasis added)

However, Applicant is currently claiming Lewis base adducts comprising a compound of formula  $\text{MgCl}_n(\text{OR})_{2-n}$ , and an aprotic Lewis base (LB) that are in molar ratios to each other defined by formula  $\text{MgCl}_n(\text{OR})_{2-n}\text{LB}_p$  in which  $n$  is from 0.1 to 1.9,  **$p$  ranges from 0.4 to 3**,  $R$  is a  $\text{C}_1$ - $\text{C}_{15}$  hydrocarbon group, and the aprotic Lewis base is selected from  $\text{C}_2$ - $\text{C}_{20}$  aliphatic ethers and alkyl esters of  $\text{C}_1$ - $\text{C}_{20}$  aliphatic carboxylic acids. Accordingly, Applicant respectfully believes the currently claimed adducts comprise a higher Mg/LB ratio than those disclosed in Scata, et al.

Additionally, Scata, et al. discloses in col. 2, lines 17-20, and col. 2, line 62 - col. 3, line 2,

. . . and (c) an electron-donor compound preferably selected from the group consisting of esters of organic and inorganic oxygenated acids, in particular from the group consisting of esters of **aromatic** acids.

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Electron-donor compounds (c) useful in the practice of this invention and different from the already indicated esters of the oxygenated acids, include ketones, aldehydes, ethers, amides, P-compounds such as phosphines and phosphoramides. The preferred compounds are the alkyl esters of the **aromatic** acids. Some typical examples of said esters are the alkyl **benzoates**, alkyl **toluates** and alkyl **anisates**. Ethyl **benzoate**, methyl **toluate** and methyl **anisate** are representative compounds. (Emphasis added)

Alternatively, Applicant is currently claiming, in part, Lewis base adducts, wherein the aprotic Lewis base is selected from C<sub>2</sub>-C<sub>20</sub> **aliphatic** ethers and alkyl esters of C<sub>1</sub>-C<sub>20</sub> **aliphatic** carboxylic acids. However, the Examiner has not explained *why*, absent Applicant's specification, one of ordinary skill in the art would have modified the disclosure of Scata, et al. to remove the aromatic electron-donor compounds therein for Applicant's currently and specifically claimed aliphatic, aprotic Lewis bases. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142. Therefore, for theses reasons alone, Applicant respectfully believes the instant rejection should be withdrawn.

Notwithstanding the above, as outlined in Applicant's specification on page 1, lines 3-6, and page 2, lines 19-21,

The present invention relates to Lewis base adducts comprising compounds of a specified formula and including

at least a magnesium compound and a Lewis base in specific amounts. The adducts of the present invention are particularly useful as precursors of Ziegler-Natta catalyst components for the polymerization of olefins.

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The applicant has now found novel precursors that upon reaction with Ti compounds generate in high yields catalyst components with **high polymerization activity** and that during said reaction do not substantially generate hydrogen chloride. (Emphasis added)

Accordingly, the currently claimed adducts not only do not substantially generate hydrogen chloride, but they also have unexpectedly high polymerization activities. This is evidenced by Example 6 and Comparative Example 7 in Applicant's specification. In particular, the Lewis base adduct of Example 6 and Comparative Example 7 were prepared in identical processes; however, the Lewis base adduct of Example 6 comprised **0.49 mol.** of the currently claimed aprotic Lewis base, whereas Comparative Example 7 comprised only **0.17 mole** of the currently claimed aprotic Lewis base. Thereafter, the yields of the resultant catalysts were 27.6 Kg/g from Mg for Example 6 versus 7.8 Kg/g from Mg for Comparative Example 7. Therefore, the Lewis base adducts of the present subject matter having the currently and specifically claimed molar ratio for the aprotic Lewis base unexpectedly produced a catalyst having a yield **over 253% greater** than a Lewis base adduct not having the currently and specifically claimed molar ratio for the aprotic Lewis base.



In light of the above, Applicant respectfully believes claims 18 and 20-36 are patentably distinct over Scata, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejection.

**3. Rejection of Claims 20 and 21 Under 35 U.S.C. §103(a) to**  
**Scata, et al. in view of WO 96/32426**

Applicant respectfully traverses the rejection of claims 20 and 21 as being unpatentable under 35 U.S.C. §103(a) to Scata, et al. in view of WO 96/32426 (herein referred to as, "Zakharov, et al.").

As outlined *supra*, the U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when

combined) must teach or suggest all the claim limitations. See MPEP §2142.

For the sake of brevity, all arguments above regarding Scata, et al. are incorporated herein by reference in their entirety. In this regard, with respect to the instant rejection, Zakharov, et al. does not remedy the deficiencies of Scata, et al.

In particular, the current Office Action states on page 6, lines 11-19,

Zakharov et al. teaches a method for the preparation of an alkoxymagnesium halide/Ti compound catalyst system suitable for the polymerization of olefins in the presence on an inert solvent, i.e., dialkyl ether or THF (page 3, lines 19-27, and claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Scata and Zakharov to obtain the invention as specified in the claim 1, motivated by the fact that the resulting catalyst is very active for the polymerization, and eliminates additional activation catalyst steps (page 2, lines 8-10).

However, Zakharov, et al. only merely discloses THF, not to mention a myriad of other solvents, can be used as an **inert solvent for a Grignard reaction**. In fact, Zakharov, et al. discloses magnesium and a compound denoted as RX are, "brought into contact with one another in the presence of an inert solvent." See page 3, lines 19-21 in Zakharov, et al. Accordingly, this is clearly different than Applicant's currently claimed Lewis base adducts comprising a compound of formula  $MgCl_n(OR)_{2-n}$ , and an aprotic Lewis base (LB) that are in molar ratios to each other defined by formula  $MgCl_n(OR)_{2-n}LB_p$  in



which  $n$  is from 0.1 to 1.9,  $p$  ranges from 0.4 to 3,  $R$  is a  $C_1$ - $C_{15}$  hydrocarbon group, and the aprotic Lewis base is selected from  $C_2$ - $C_{20}$  aliphatic ethers and alkyl esters of  $C_1$ - $C_{20}$  aliphatic carboxylic acids. Furthermore, Applicant respectfully believes the Examiner has not explained *why*, absent Applicant's specification, one of ordinary skill in the art would have selected the inert solvent, THF, from the disclosure of Zakharov, et al. and substituted it for the aromatic electron-donor compounds (c) in Scata, et al. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142. In fact, Applicant respectfully believes, if anything, one of ordinary skill in the art would only have gleaned from Zakharov, et al. that THF could be used as an inert solvent in a Grignard reaction, since after all, this is what Zakharov, et al. discloses.

In light of the above, Applicant respectfully believes claims 18 and 20-36 are patentably distinct over Scata, et al. in view of Zakharov, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejection.

#### CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the prior art of record. The Examiner is therefore respectfully requested to reconsider and withdraw all pending rejections, and



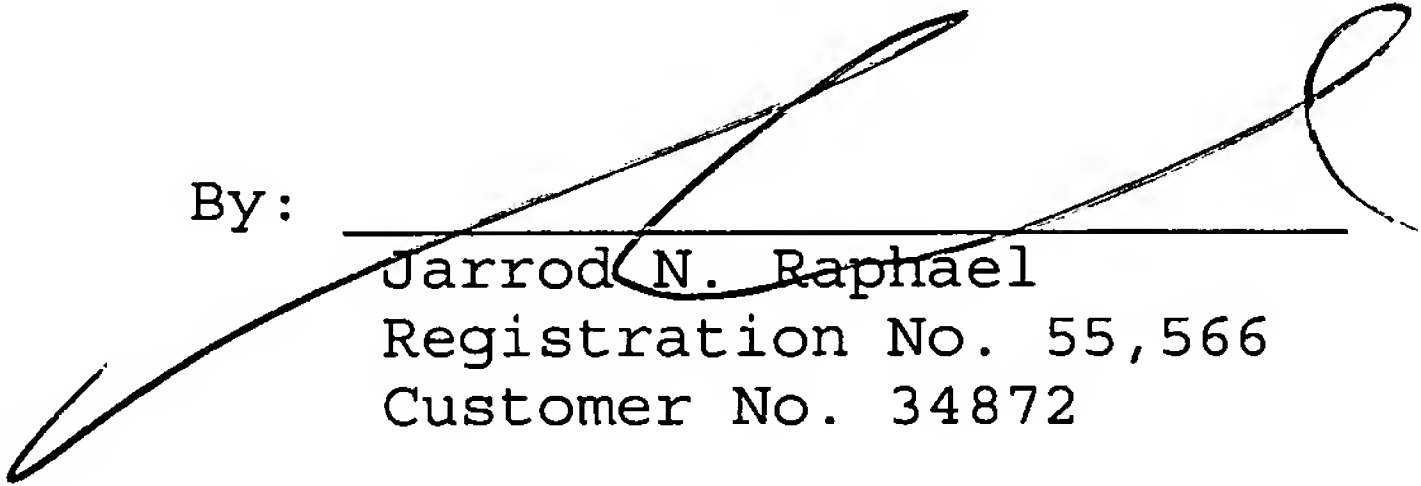
U.S. Patent Application  
Serial No. 10/594,780

allow pending claims 18 and 20-36. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

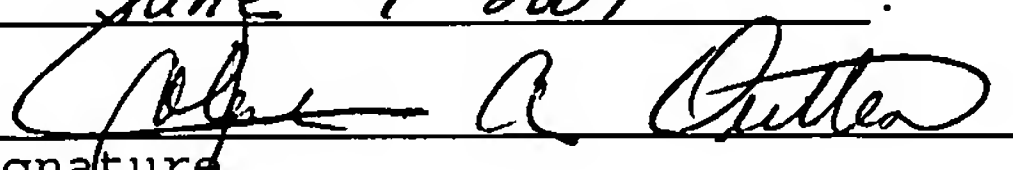
In order to advance prosecution on the above-identified application, the Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on

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